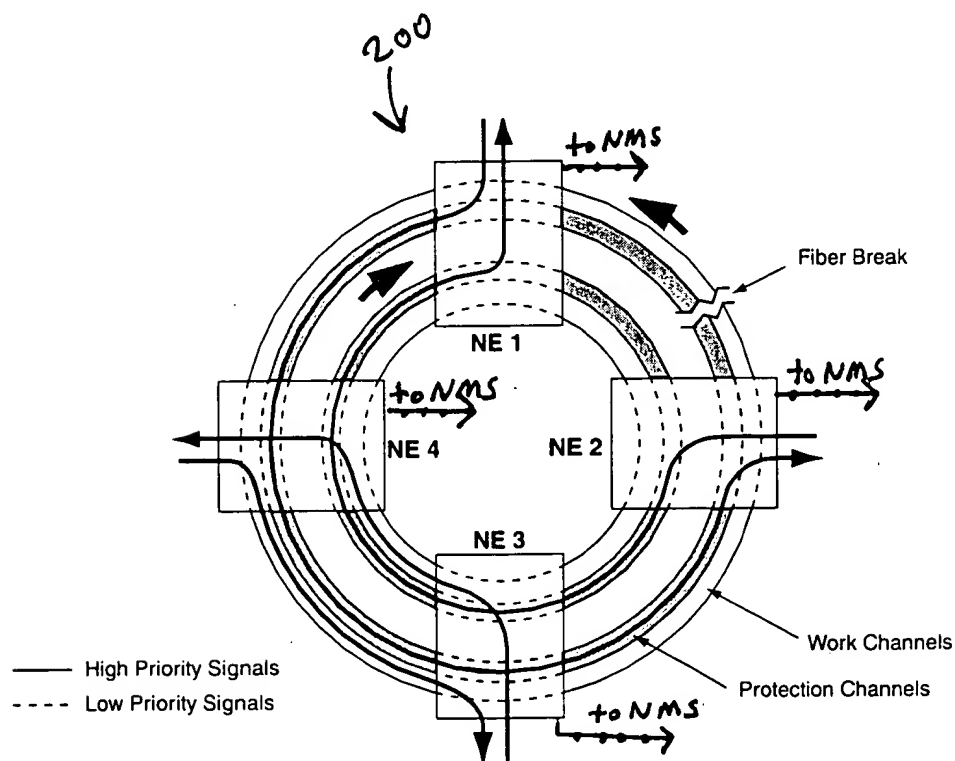
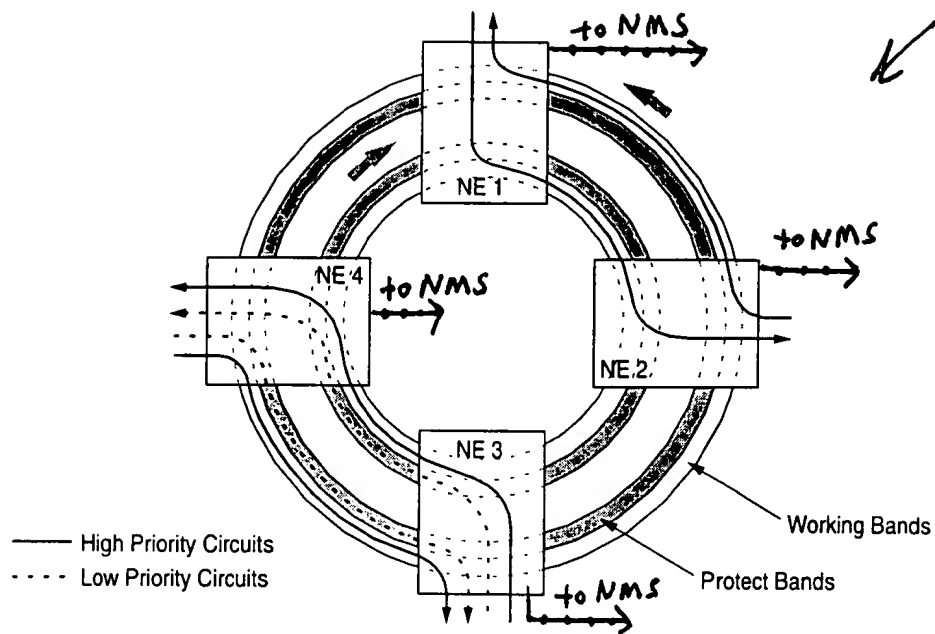


FIG. 1 (prior art)



00000000000000000000000000000000

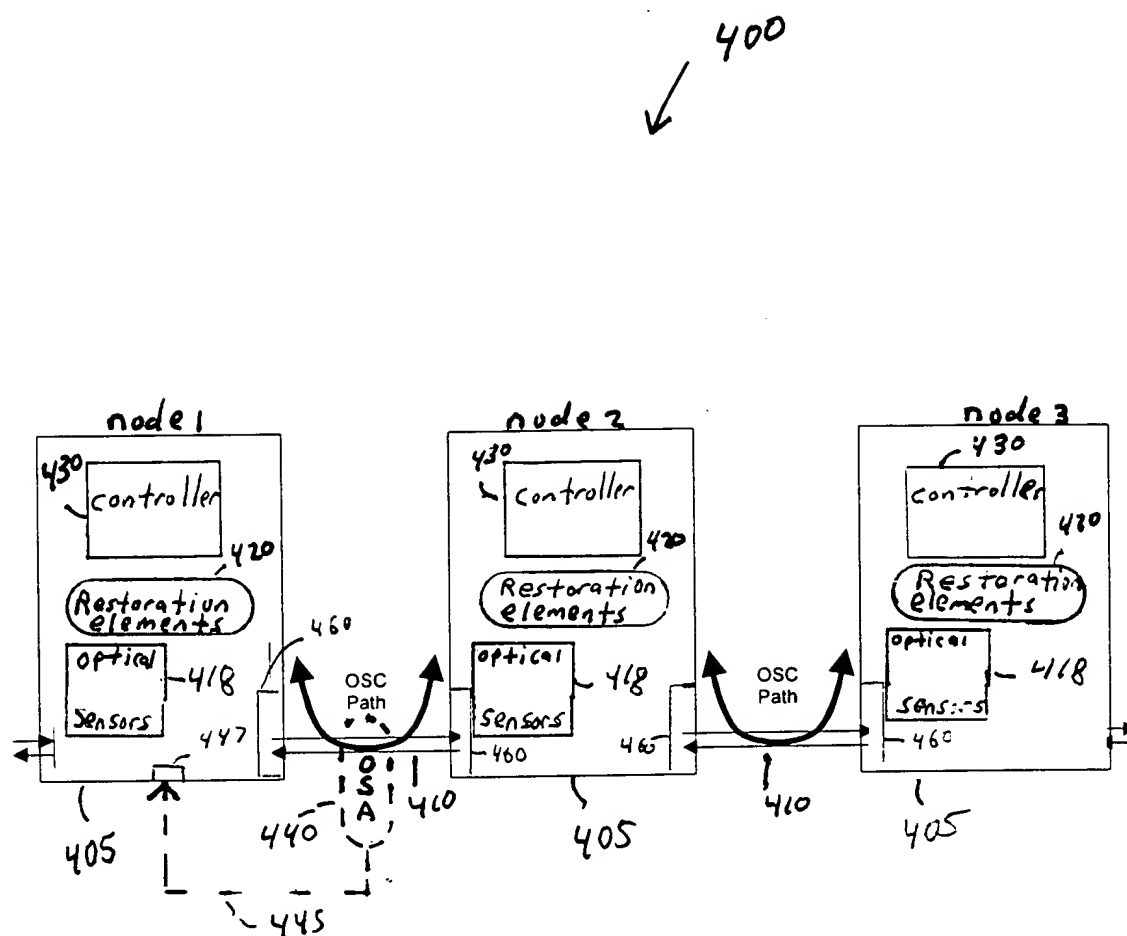


FIG. 4

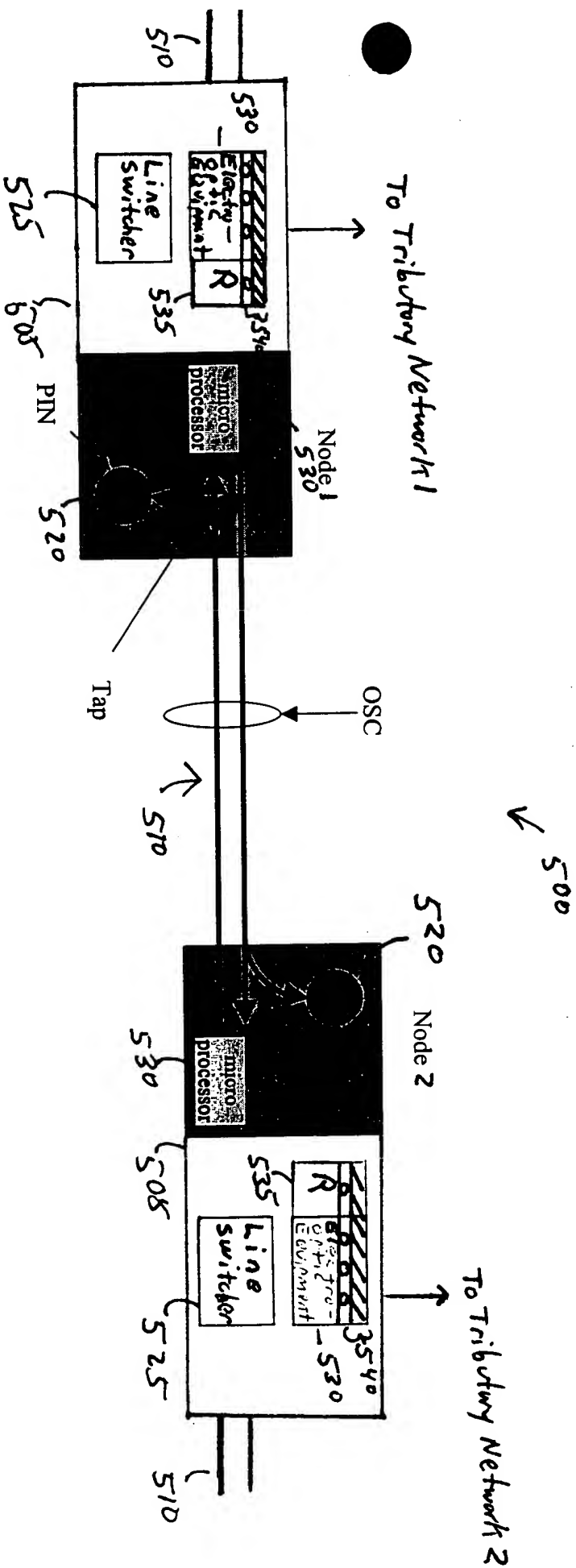


FIG. 5

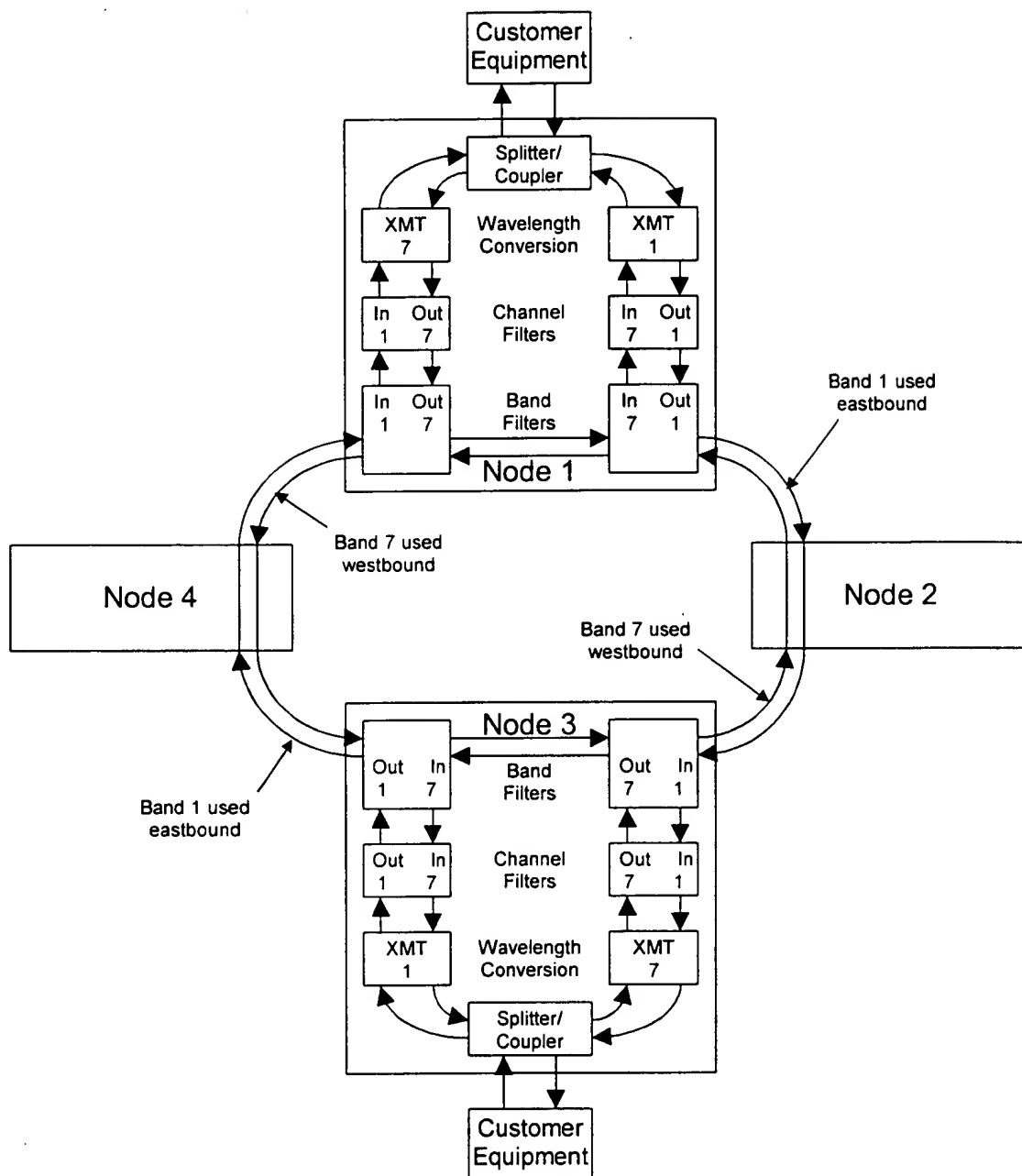
[illegible]

FIG. 6





**SECRET**

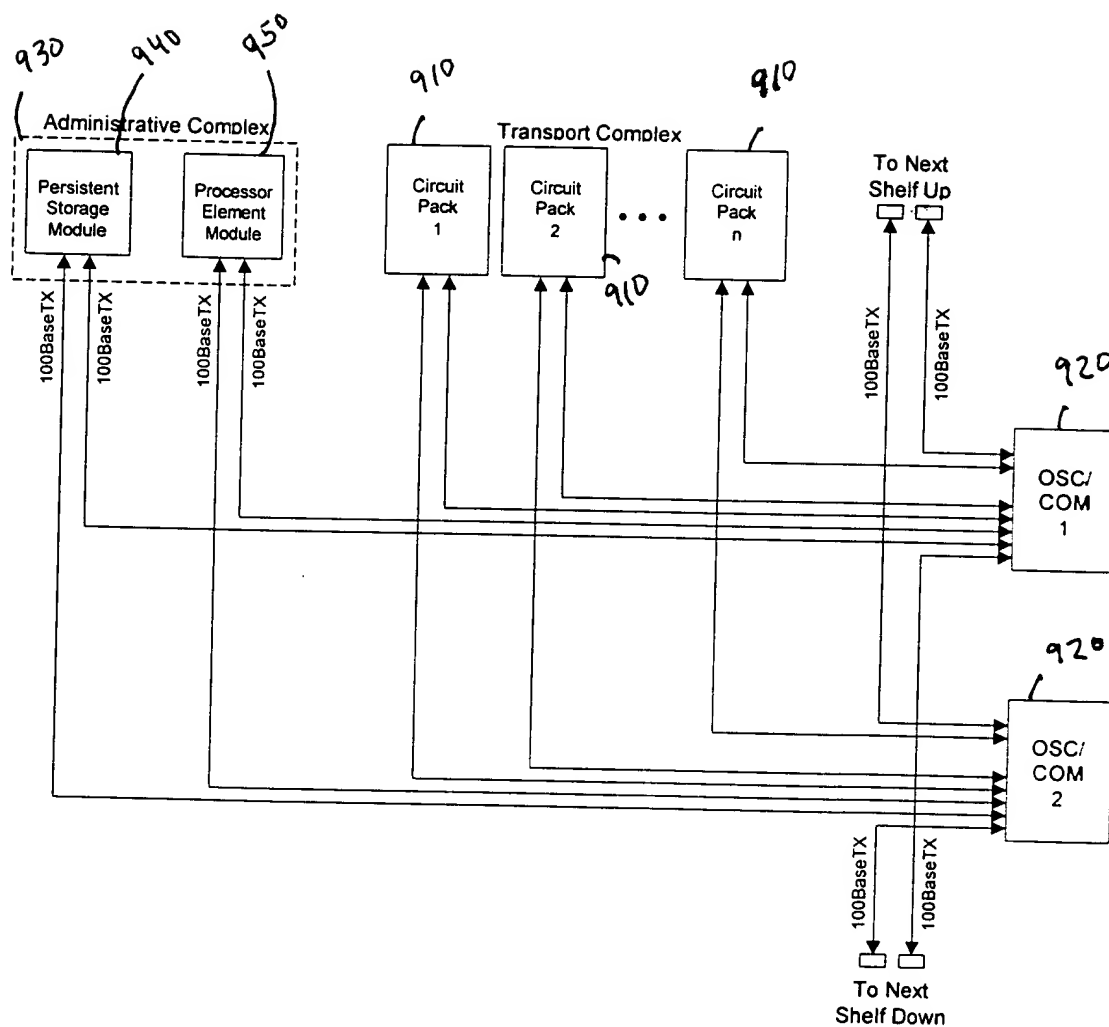


FIG. 9



### Intra-node Fiber Fault Handling

**Legend:**

RS	Ring Switch
DRS	Ring Switch Delayed
EQ	Equipment Switch
DEQ	Equipment Switch Delayed
LOS	Loss of Signal at receiver(s)

Indicates a resulting action

Component	Connecting Fibre		Local Node Effect	Downstream Node Effect
	To WPS	Working and PCA drops see LOS		
Low/PosiAmp	To WPS	Working and PCA drops see LOS	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.
	From WPS	No impact	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.
	To Unswitched BWDM	Local working UCA, and PCA drops see LOS	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.
	From Unswitched BWDM	No impact	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.
PieAmp	To/From OSC To Neighbor	Do not protect against OSC failure – use as ring switch trigger if applicable. No impact	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.	Downstream neighbor WPS receive PIN detects no light. Local passthru or add channels report LOS downstream.
	From Neighbor	Local working UCA, and PCA drops see LOS	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.
	To WPS or Unswitched Band	Working and PCA drops see LOS	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.
	From Line Card	Working and PCA drops see LOS	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.	If local node adds traffic, downstream neighbor WPS receive PIN detects light. Otherwise, downstream neighbor WPS receive PIN detects no light. Local passthru channels detect LOS downstream. Local add channels are OK downstream.
WPS	Working from RSM	No impact	Local passthru and add working channels report LOS downstream. PCA channels OK downstream. If local node has protect access traffic, downstream neighbor WPS receive PIN detects light. If no protect access traffic, downstream neighbor WPS receive PIN detects no light.	Local passthru and add working channels report LOS downstream. PCA channels OK downstream. If local node has protect access traffic, downstream neighbor WPS receive PIN detects light. If no protect access traffic, downstream neighbor WPS receive PIN detects no light.
	Protected from RSM (No action taken and/or protect equipment)	No impact	Local passthru and add PCA channels report LOS downstream.	Local passthru and add PCA channels report LOS downstream.
	Working from backup BWDM	No impact	Only detectable if carrying traffic. If equipment switched, local passthru and add channels report LOS downstream. No autorevert to primary.	Only detectable if carrying traffic. If equipment switched, local passthru and add channels report LOS downstream. No autorevert to primary.

Detailed Protection Action				
Open Nod	Piasithru Node	Blarne piasithru	Boposane piasithru	RGM Glasithru
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
RS	RS	RS	RS	RS
EQ	EQ	EQ	EQ	EQ
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a

Open Node	Past thru Node	Barre past thru	Boopastu	RSM Glassthu
OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS
OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
Downstream OSC LOS LINE IN LOS Action: RS	Downstream OSC LOS LINE IN LOS Action: RS	Downstream OSC LOS LINE IN LOS Action: RS	Downstream OSC LOS LINE IN LOS Action: RS	Downstream OSC LOS LINE IN LOS Action: RS
OSC LOS LINE IN LOS Action: RS	OSC LOS LINE IN LOS Action: RS	OSC LOS LINE IN LOS Action: RS	OSC LOS LINE IN LOS Action: RS	OSC LOS LINE IN LOS Action: RS
OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS
OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS	OSC OK WPS IN LOS Basic LOS
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a

[illegible]

FIG. 10A



03648672.082300

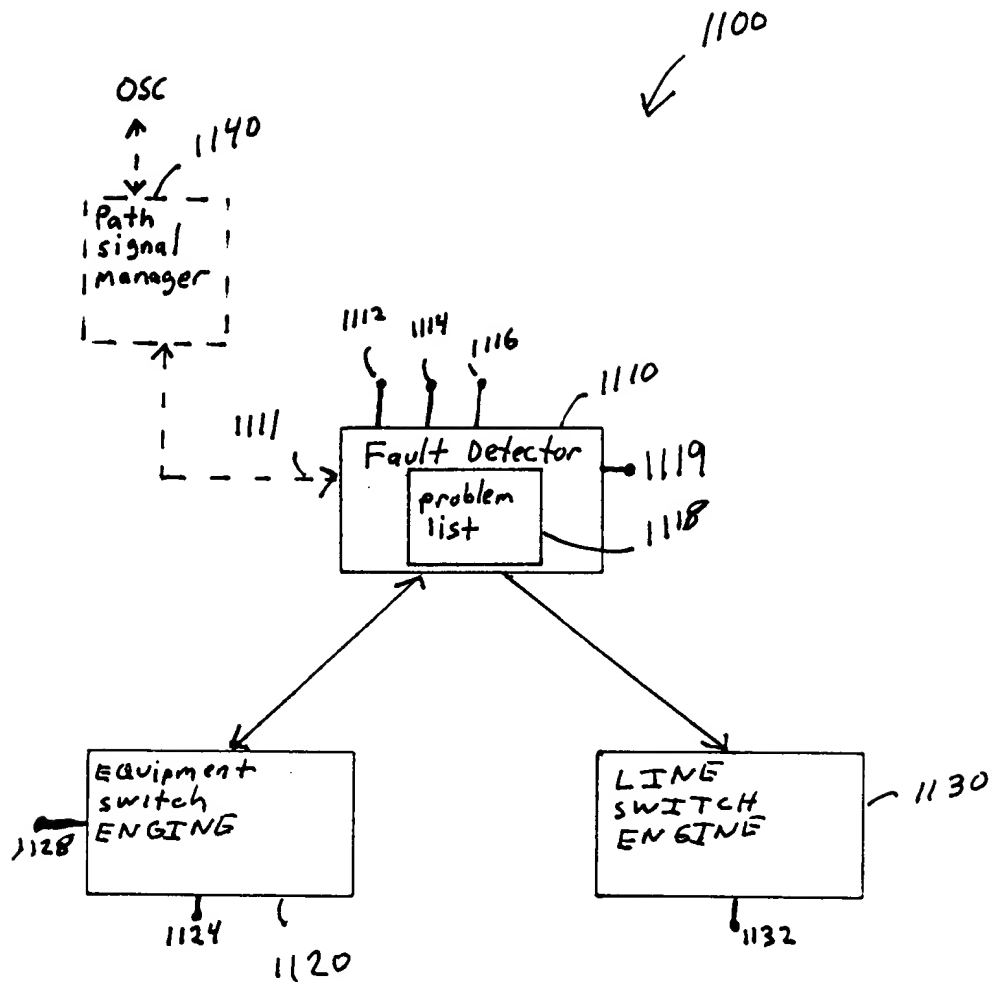


FIG. 11

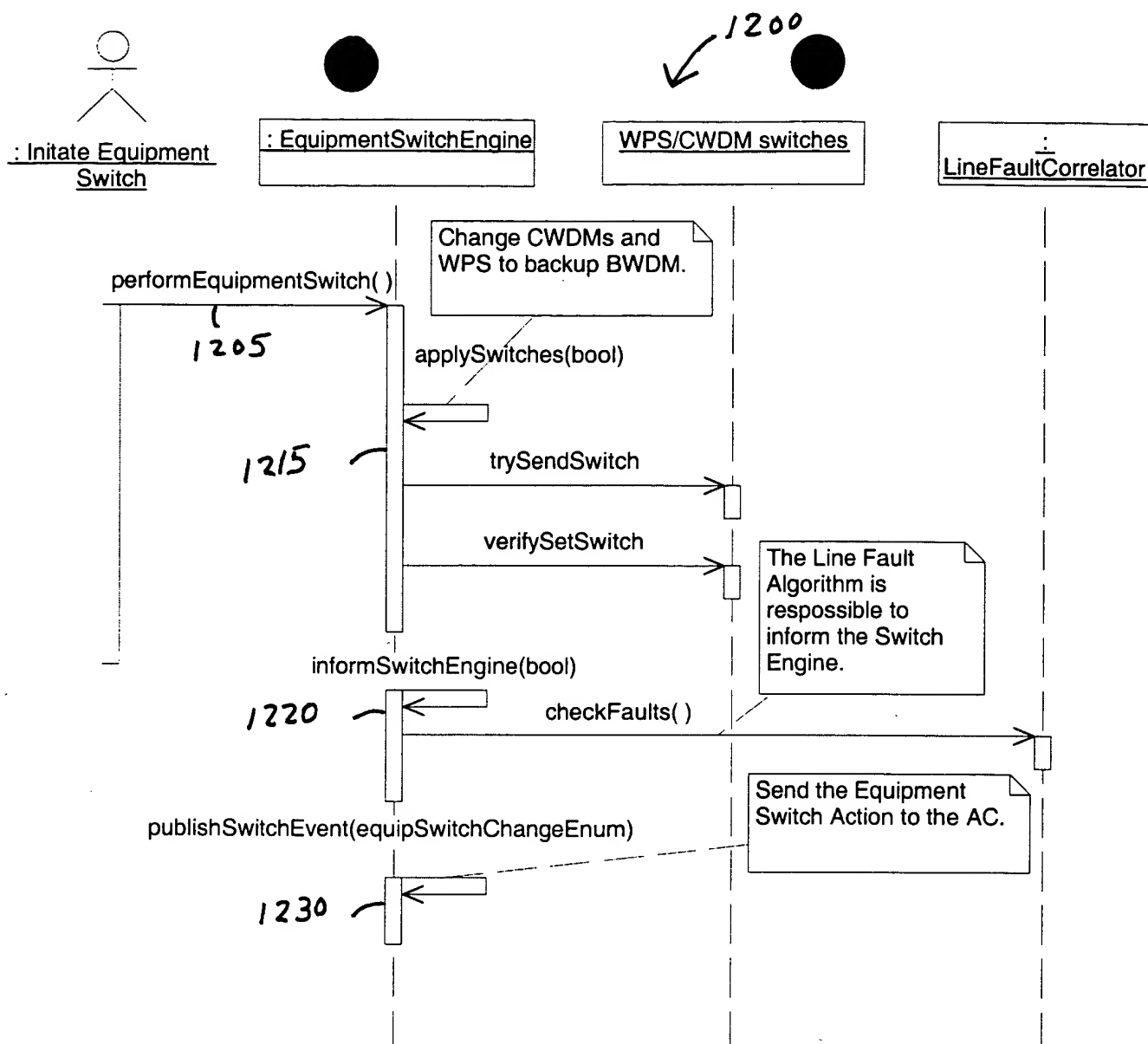


FIG. 12

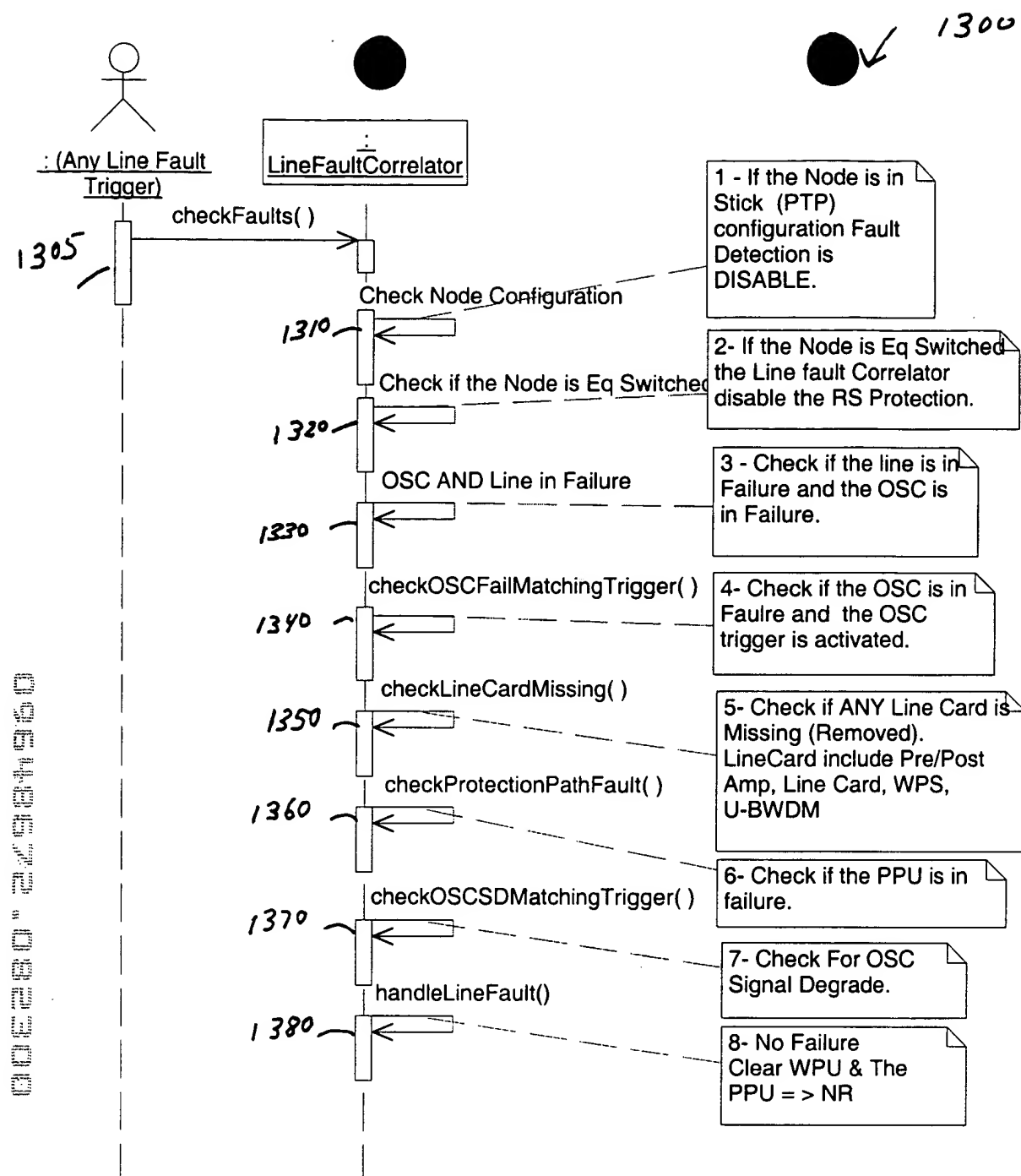


FIG. 13